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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,153	11/25/2003	Masaru Kohno	0229-0783P	4152
2292	7590	12/13/2005		
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			EXAMINER BLAU, STEPHEN LUTHER	
			ART UNIT	PAPER NUMBER
			3711	
DATE MAILED: 12/13/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/720,153

Applicant(s)

KOHNO, MASARU

Examiner

Stephen L. Blau

Art Unit

3711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-7 is/are rejected.
- 7) ☒ Claim(s) 8 and 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 2-3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bliss in view of Oonuki, Evans and Soracco.

Bliss discloses a horizontal tangential line passing through an area center of gravity of the face surface and being in contact with the face surface in the form of an idealized planar face such that a tangent line parallel to line "h" would exist directly in front of the center of gravity on the same horizontal plane and it would intersecting a perpendicular line dropped to a tangential line from a sweet spot (as defined in the specification (where the line from the center of gravity of a head is perpendicular to the face) being arranged on a tangential line within 2 mm from an area center of gravity close to a toe and within 4 mm close to a heel in the form of the intersection would be directly at the projection point of the center of gravity on the face at same horizontal plane of the center of gravity but below the sweet spot (0 mm) (Fig. 2, Col. 3, Lns. 35-60). In addition, Bliss will have a the shortest distance between the center of gravity of the head to the center line of the shaft axis, a head volume, a moment of inertia around

a normal axis passing through the center of gravity, and a moment of inertia around the axis passing through the center of gravity of a head and parallel to the horizontal plane in the form of all heads will have these characteristics.

Bliss lacks the shortest distance between the center of gravity of the head to the center line of the shaft axis being 47-48 mm, a head volume being in a range of from 350 to 500 cm<sup>3</sup>, a moment of inertia around a normal axis passing through the center of gravity of a head being not less than 3400 gxc<sup>2</sup>, and a moment of inertia around the axis passing through the center of gravity of a head and parallel to the horizontal plane being not less than 2000 gxc<sup>2</sup>.

Oonuki discloses the shortest distance between the center of gravity of the head to the center line of the shaft axis being 47-48 mm (Fig. 66, Col. 2, Lns. 23-35). In view of the patent of Oonuki it would have been obvious to modify the head of Bliss to have the shortest distance between the center of gravity of the head to the center line of the shaft axis being 47-48 mm in order to utilize a dimension which is used in the art in designing a golf head and in order to form a large volume head with a shaft near the heel to play a round of golf with.

Evans discloses a titanium head having a volume being 350 cm<sup>3</sup> (Col. 3, Lns. 66-67). In view of the patent of Evans it would have been obvious to modify the head of Bliss to have a head volume being 350 cm<sup>3</sup> in order to have a head with a large face and sweet spot when hitting a ball.

Soracco discloses a wood type head having a moment of inertia around a normal axis to a horizontal axis passing through the center of gravity of a head being not less

than  $3400 \text{ gxc}^2$  ( $I_{zz}$  (Table Two), Fig. 10), and a moment of inertia around the axis passing through the center of gravity of a head and parallel to the horizontal plane being not less than  $2000 \text{ gxc}^2$  ( $I_{xx}$  or  $I_{yy}$  (Table Two), Figs. 10, 10A). In view of the patent of Soracco it would have been obvious to modify the head of Bliss to have a moment of inertia around a normal axis passing through the center of gravity of a head being not less than  $3400 \text{ gxc}^2$ , and a moment of inertia around the axis passing through the center of gravity of a head and parallel to the horizontal plane being not less than  $2000 \text{ gxc}^2$  in order to have a head with a large sweet spot such that the head does not deflect much in the heel to toe direction as well as the top to sole direction and in order to utilize an inertial profile used in the market place.

3. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bliss in view of Oonuki, Evans and Soracco as applied to claims 2-3 above, and further in view of Iwata.

Bliss discloses a face in reality having both bulge and roll rendering it less than a planar surface (Col. 3, Lns. 35-41).

Bliss lacks a face having a bulge and a roll each having a radius of curvature in the range of from 254 to 356 mm. Iwata discloses a wood type head having a face bulge and roll each having a radius of curvature in the range of from 254 to 356 mm (Claim 2) in order to have no feeling of misfit and improved carry (Col. 1, Lns. 9-16). IN view of the patent of Iwata it would have been obvious to modify the head of Bliss to have a face having a bulge and a roll each having a radius of curvature in the range of

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from 254 to 356 mm in order to hit a ball similar even if the head is not square to the ball.

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bliss in view of Oonuki, Evans and Soracco as applied to claims 2-3 above, and further in view of Seki.

Bliss discloses a hollow head formed of suitable metal material as titanium alloy (Col. 3, Lns. 5-13).

Bliss lacks a main body composed of Ti-6Al-4V and a face plate attached to the body composed of Ti-4.5Al-3V-2Mo-2Fe. Seki discloses a main body composed of Ti-6Al-4V and a face plate attached to the body composed of Ti-4.5Al-3V-2Mo-2Fe (Table 3, Example 1) in order to have a ball initial speed increased and carry increased (Col. 10, Lns. 40-45). In view of the patent of Seki it would have been obvious to modify the head of Bliss to have a main body composed of Ti-6Al-4V and a face plate attached to the body composed of Ti-4.5Al-3V-2Mo-2Fe in order to have a ball initial speed increased and carry increased.

***Allowable Subject Matter***

5. Claims 8-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. With respect to claim 8, none of the prior art

discloses or renders as obvious a sweet spot located where the face is intersected by a line perpendicular to the face extending through the center of gravity, a horizontal line tangent to the face at an area center of gravity of the face parallel to the vertical plane and thickness of a toe being larger than a thickness of a neck in addition to the other elements of structure claimed. With respect to claim 9, none of the prior art discloses or renders as obvious a sweet spot located where the face is intersected by a line perpendicular to the face extending through the center of gravity, a horizontal line tangent to the face at an area center of gravity of the face parallel to the vertical plane and a point at which the horizontal line intersects a perpendicular line extending from a sweet spot where this point is located away from the area of center of gravity in the direction toward the heel in addition to the other elements of structure claimed.

**6. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

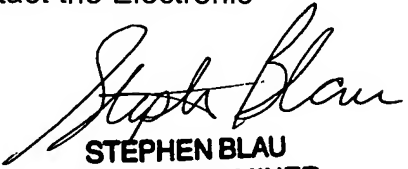
**Conclusion**

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Murtland and McCabe disclose curved face configurations. Rugge discloses offset weight distribution. Zebelean discloses thick toe walls compared to neck walls.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen L. Blau whose telephone number is (571) 272-4406. The examiner can normally be reached on Mon - Fri 10:00 AM - 6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eugene Kim can be reached on (571) 272-4463. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
**STEPHEN BLAU**  
**PRIMARY EXAMINER**